DOCUMENT RESUME

ED 196 654 SE 033 070

AUTHOR Dyer, Patricia A.
TITLE American Mathematical Association of Two-Year Colleges Developmental Mathematics Curriculum Committee: Annual Report, October 1980.
INSTITUTION American Mathematical Association of Two-Year Colleges.
PUB DATE Oct 80
NOTE 31p.; For related document, see ED 179 262. Not available in hard copy due to marginal legibility of original document.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Annual Reports; *College Mathematics; Committees; Curriculum Development; Higher Education; *Mathematics Curriculum; *Mathematics Education; Mathematics Instruction; Remedial Mathematics; *Two Year Colleges
IDENTIFIERS *Mathematics Education Research

ABSTRACT

Presented is the annual report of the Developmental Mathematics Curriculum Committee (DMC), a standing committee of the American Mathematical Association of Two-Year Colleges (AMATYC). Organized in 1974, DMC is comprised of members of AMATYC interested in developmental mathematics. Developmental mathematics is roughly defined as remedial mathematics, and includes arithmetic topics, basics of algebra, and elementary geometry. This report covers the activities and research results of the subcommittees of DMC, lists DMC goals and objectives, and reviews the 1977-82 five-year plan. Individual reports include information from the following subcommittees: Evaluation Model, Hand-Held Calculators, Learning Problems, Minimal Competency, Newsletter for DMC, Teacher Qualifications, and Testing. It is concluded that it is time to revise the long time objectives of the DMC Committee and the goals of the subcommittees. The report ends with a summary of the individual subcommittee statements. (MP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Patricia A. Dyer
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SCOPE OF INTEREST NOTICE
The ERIC Facility has assigned this document for processing to: SE JC
In our judgement, this document is also of interest to the clearinghouses noted to the right. Indexing should reflect their special points of view.

ED196654

AMERICAN MATHEMATICAL ASSOCIATION OF TWO-YEAR COLLEGES

DEVELOPMENTAL MATHEMATICS CURRICULUM COMMITTEE

ANNUAL REPORT

OCTOBER 1980

Patricia A. Dyer, Chairperson
Broward Community College, North
Pompano Beach, Florida 33066

SE 033 070

INTRODUCTION

The Developmental Mathematics Curriculum Committee was one of the first standing committees of the AMERICAN MATHEMATICAL ASSOCIATION OF TWO-YEAR COLLEGES (AMATYC). Organized in 1974, the committee is comprised of those members of AMATYC interested in the topic of developmental mathematics. Developmental mathematics has been roughly defined as remedial mathematics. This includes arithmetic topics, basics of algebra, and some elementary geometry.

At the 1979 annual meeting, decisions were made to go in new directions with the DMC Committee work. One subcommittee, Liaison, was dissolved upon its own recommendation; one, Testing, completed its planned work and required a new perspective; and one new subcommittee, Learning Problems, was established. With this last, for the first time, the DMC Committee moved into new territory, including in its domain developmental mathematics topics in addition to curriculum.

This year's report to the membership of AMATYC continues in the pattern established with the 1978 and 1979 annual reports. Each of them is on file with ERIC, Clearing House for Junior Colleges, as this one will be. They included the DMC Committee's goals and objectives articulated in a five-year plan (1977-82) and reported activities and research results of the several subcommittees for each of the years.

This annual report reviews the five-year plan 1977-82. The reports of the individual subcommittees serve to point up the need to review and update the Committee's plan as well as each of the subcommittees' goals and objectives.

TABLE OF CONTENTS

	Page
Introduction	1
Officers	3
The DMC Committee Goals and Objectives	4
Subcommittee Reports:	
Evaluation Model — Matthew Hassett, Arizona State University, Tempe, Arizona	6
Hand-Held Calculators — Lowell Salmond, Utah Technical College, Salt Lake City, Utah	9
Learning Problems — Karen Sharp, Charles Stewart Mott Community College, Flint, Michigan	13
Minimal Competency — Etta Mae Whitton, Tallahassee Community College, Tallahassee, Florida	18
Newsletter for DMC — Alice Berridge, Nassau Community College, Garden City, New York	21
Teacher Qualifications — Ronald Adams, Yavapai College, Prescott, Arizona	23
Testing	26
Conclusions	29

Officers

Developmental Mathematics Curriculum Committee

Chairperson	- Patricia A. Dyer Broward Community College, North Pompano Beach, Florida 33066
Co-Chairperson	- Ann Dice William Rainey Harper Community College Palatine, Illinois 60067
Secretary	- Alice Berridge Nassau Community College Garden City, New York 11530
Subcommittee Chairpersons	- See Table of Contents.

DMC COMMITTEE GOALS AND OBJECTIVES

Broad objectives for the committee:

1. To encourage communication between the AMATYC DMC Committee, State Associations, TYColleges, and other interest groups.

2. To develop awareness and understanding of the need for a workable DMC program in TYColleges.

3. To provide opportunities for upgrading DMC methodology.

The Five-Year Plan, 1977-1982

1. Development of a policy on the proper and best use of hand-held calculators in DMC programs.

2. Compile an item pool of test questions. From the pool, questions can be selected for use as a placement test as well as for performance rating of students in DMC. A retrieval system will be developed to generate tests randomly.

3. Organization of workshops for upgrading DMC, including testing and evaluation workshops.

4. Publication of a DMC newsletter to encourage communications.

5. Design guidelines and recommendations to be presented to universities for the training of future two-year college mathematics teachers in the area of remediation.

6. Design of a general evaluation model for DMC.

7. Establishment of recommended minimal competency requirements in mathematics for a two-year college.

8. Preparation of grant proposals to help implement the objectives of the DMC Committee.

9. Establishment of a liaison committee to maintain contact and communication with DMC units of other mathematics or educational organizations.

EVALUATION MODEL

The five-year goal for this committee was the development of a practical guide for performing evaluations of DMC at many different colleges. The objectives were:

1. Improve the evaluation form developed at an earlier date by the DMC Committee.

2. Institute a pilot program with selected schools and collect data.

3. Analyze and tally the resulting data.

4. Increase the number of participating schools and repeat the data-collecting procedure.

5. Begin the development of specific workable guidelines for DMC programs and specific evaluation procedures.

In the past two academic years, this subcommittee has been working vigorously. It has identified four basic evaluation areas:

1. Student performance as measured by standardized test scores, completion rates, follow-up success, etc.

2. Student evaluation of programs as measured by attitude questionnaires.

3. Faculty evaluation of developmental programs.

4. Administrative evaluation by deans and chairpersons in schools with developmental programs.

During 1978-79, the primary focus of the subcommittee was on student performance evaluation. Thirty schools agreed to pre- and post-test students in algebra courses using MAA placement tests. Preliminary results were reported in 1979 based on returns from eleven schools.

In this process, a number of problems were identified. They included, but were not restricted to, these variables: course content, student completion rate (of courses), and student placement. Another problem was the mechanics

of administering the pre/post test. These were to be addressed during the past year as well as objectives four and five.

Progress on those objectives is detailed in the following subcommittee annual report.

ANNUAL REPORT OF THE SUBCOMMITTEE ON EVALUATION MODEL

by

Matthew Hassett
Arizona State University
Tempe, Arizona

The major accomplishment of this subcommittee during the past year was the AMATYC Rocky Mountain Mathematics Consortium Conference on Evaluation. This conference, held at Tempe, Arizona in March, 1980, attracted 140 participants from around the country - including representatives of the professional evaluation research community - as well as two and four-year college mathematics teachers. The interchanges at this conference provided a base of research information and classroom teacher suggestions upon which the proposed evaluation model could be built. Initial drafts of the model are now being developed and critiqued; a working version will be available for the Evaluation Workshop to be offered at the October 1980 meeting of AMATYC in Washington.

Committee members are still collecting data on performance and attitude of developmental students. This effort is aimed at provision of a data base which would enable developmental mathematics teachers to determine realistic goals for their classes or programs. (For example, it is apparent from our initial studies that a goal of a 90% completion rate for all entering students in developmental mathematics is unrealistic. A completion rate of 50% or 60% of all entering students is the rule in the programs we have studies so far.)

The committee's work for the next year should include:

(a) Systematic analysis and expansion of our data base on developmental program results.

(b) Refinement of the Evaluation Model based on reactions of AMATYC members and analysis of our data base.

(c) Publication of a conference proceedings for the March 1980 Conference.

HAND-HELD CALCULATORS

The five-year goal of this committee is to establish a recommended procedure for the use of hand-held calculators in DMC classes. Objectives were listed as:

1. Determine the present policy in DMC two-year college classes on hand-held calculators.

2. Set up debates on the wisest use of hand-held calculators.

3. Survey other organizations to determine attitudes toward calculators.

4. Perform some experimentation into the benefits and faults of using calculators.

5. Establish and publicize an AMATYC policy for the use of calculators in DMC classes.

During 1978 and 1979, this subcommittee did a study by questionnaire each year. The results of the first provided data on the positions of tyc teachers and colleges on the use of the hand-held calculators in DMC classes.

Six different questions were answered. The responses indicated that tyc teachers of DMC thought: 1) the use of the calculator should be taught in conjunction with a specific topic; 2) the desire of the student to learn basic concepts is not hindered by the use of the calculator; 3) no particular calculator was considered superior; and 4) restrictions were not imposed on activity (homework, checking, tests, etc.) where students were permitted the use of the calculator. Also, most schools: 5) do not furnish calculators for students and 6) have no stated policy relating to the use of the hand-held calculator in classes.

In the 1979 survey, item 2), above, was followed up. The conclusion of the subcommittee was that "there seems reason to believe that a student who uses a calculator to learn basic arithmetic does better." The subcommittee recommended a further study. Starting in 1980, this further study has begun. It should be completed by summer 1981. The student

attitude study, when the use of hand-held calculators is permitted in class, is being conducted at the same time.

This subcommittee is on schedule and should have formulated an AMATYC position by October 1982.

ANNUAL REPORT OF THE SUBCOMMITTEE ON HAND-HELD CALCULATORS

by

Lowell Salmond
Utah Technical College
Salt Lake City, Utah

During the academic year 1979-80, two tests were constructed/identified and distributed to schools. Both designed for students in mathematics classes in which hand-held calculators might be used, one is a "wide-range math test," and the other is a student attitude test. The research is designed to compare student performance in mathematics courses with and without having hand-held calculators available, that is, two groups of students are necessary for comparison. Since these are to be used as pre- and post-tests, the testing is to be done during the academic year 1980-81.

Results are to be reported at the 1981 annual AMATYC/DMC meeting. Other plans for this year include a preliminary draft of a recommendation, an AMATYC/DMC position on the use of hand-held calculators.

Female ___
Male ___

Check Age
Under 30 ___
30/Over ___

ARITHMETIC APTITUDE SCALE

NAME _____

INSTRUCTIONS: Place a check mark (✓) to the left of each statement with which you agree. If you disagree with the statement, do not put any mark to the left of that statement.

_____ 1. I avoid arithmetic because I am not good with figures.

_____ 2. Arithmetic is very interesting.

_____ 3. Arithmetic is something you have to do even though it is not enjoyable.

_____ 4. I like arithmetic because the procedures are logical.

_____ 5. I would rather do anything else than do arithmetic.

_____ 6. Arithmetic thrills me and I like it better than any other subject.

_____ 7. I am afraid of doing word problems.

_____ 8. Working with numbers is fun.

_____ 9. I get no satisfaction from doing arithmetic.

_____ 10. I never get tired of working with numbers.

_____ 11. I detest arithmetic and avoid using it at all times.

_____ 12. I like arithmetic because it is practical.

_____ 13. I have a growing appreciation of arithmetic through understanding its place, applications, and processes.

_____ 14. I have never liked arithmetic.

_____ 15. I have always liked arithmetic because it has presented me with a challenge.

_____ 16. I don't feel sure of myself in arithmetic.

_____ 17. The completion of proof of accuracy in arithmetic gives me satisfaction and feeling of accomplishment.

_____ 18. Sometimes I enjoy the challenge presented by an arithmetic problem.

_____ 19. I am completely indifferent to arithmetic.

_____ 20. I like working all types of arithmetic problems.

_____ 21. I like arithmetic, but I like other subjects just as well.

_____ 22. I have always been afraid of arithmetic.

LEARNING PROBLEMS

At the 1979 Annual Meeting of AMATYC, the DMC Committee established this new subcommittee. Professor Karen Sharp was appointed chairperson and a plan was outlined for the subcommittee.

The first task was to identify the subcommittee purpose and function, that is, its goals and objectives. During this year, the subcommittee has its work well underway, having completed the statement of goals and objectives and having begun the accomplishment of the first objective. A survey of the membership of AMATYC was made and plans have been made to replicate it in the fall of 1980 because of problems encountered in the first distribution. The survey form and the results of the spring survey are included here with the subcommittee's annual report.

The five-year goal of this subcommittee is the identification of major student learning problems in the mathematics curriculum and the establishment of recommended methods of correcting these problems for the use of two-year college teachers of DMC.

ANNUAL REPORT OF THE LEARNING PROBLEMS SUBCOMMITTEE

by

Karen Sharp
Charles Stewart Mott Community College
Flint, Michigan

This subcommittee was established in October 1979 in San Diego, California at the AMATYC annual convention. The first task was to formulate goals for the subcommittee.

Five-Year Plan/Objectives

1. Identify the major areas of student learning problems by
   (i) a search of the available literature.
   (ii) a survey of the membership of AMATYC.
   (iii) a survey of students.

2. Search for methods to correct these problems through
   (i) techniques of effective teachers.
   (ii) results of research as found in the literature.

3. Disseminate the findings to the membership of AMATYC by
   (i) workshops at the national convention.
   (ii) the annual report of the DMC Committee.
   (iii) a bibliography or summary of important sources of information in the area of student learning problems.

Since the first goal is to identify the major learning problems, that seemed the logical place for the committee to begin functioning. Accordingly, an ERIC search was undertaken and a survey of the membership was conducted in late May. Unfortunately, due to a postal delay, the survey was not distributed via The AMATYC Review as intended and the survey also reached the membership with only a week left before it had been requested to be returned. The survey also reached many campuses after the summer break had begun. Accordingly, the survey will be made again this fall in The AMATYC Review. A preliminary report of the surveys returned so far

indicates the following: The most mentioned areas of student learning problems were weak background in mathematics; lack of, or poor, ability in problem solving, lack of motivation, math anxiety, poor study habits, and poor reading ability. Other areas of student learning problems mentioned were lack of, or poor, ability to generalize; lack of, or poor, ability to abstract, poor retention, instructor approach, busy schedule; lack of, or poor, ability to analyze, lack of, or poor, ability to manipulate, instructional materials, placement, sight/hearing problems, and lack of program evaluation.

Suggestions made for correcting these student learning problems included: review basics, drill and practice, improve study habits, improve placement, individual help, teach problem solving/higher order thinking, refer student to counselors, mastery learning, use tutors, improve student motivation, provide quality instruction, use math lab, improve elementary and secondary instruction, use small group instruction, use better instructional materials, use computers or other media, individualize instruction, improve program evaluation, improve mathematical notation, present material from concrete to abstract, self-pacing, have "expert" teachers train other teachers, improve financial aid, make math fun, set up math anxiety clinic, and study cognitive styles.

The remainder of the survey requested names of individuals particularly successful in working with student learning problems or who had done research in the area of student learning problems. A list of these names can be obtained from the student learning problems chairperson.

Other avenues of information are also being explored with several letters having been written to organizations and individuals who work with student learning problems and seem to be particularly effective.

For the future, this committee should continue to explore and identify the major student learning problems and their solutions. The committee hopes to share its finding and ways to correct student learning problems by the next annual convention. Watch for the DMC annual report and any workshops or presentations at the next annual convention.

Summary

Survey for Learning Problems Subcommittee

Spring, 1980

(1) Identify the major areas of student Learning Problems as you perceive them.

a.	Weak background in mathematics	22
b.	Lack of or poor ability in problem solving	15
c.	Lack of purpose/poor attitude (motivation)	15
d.	Math anxiety	12
e.	Poor study habits	12
f.	Poor reading ability	11
g.	Lack of or poor ability to generalize	7
h.	Lack of or poor ability to abstract	7
i.	Poor retention	6
j.	Instructor approach	5
k.	Busy schedule	5
l.	Lack of or poor ability to analyze	4
m.	Lack of or poor ability to manipulate	3
n.	Instructional materials	3
o.	Placement	1
p.	Sight/hearing problems	1
q.	Lack of program evaluation	1

(2) What suggestions for correcting these problems can you offer?

a.	Review basics/drill and practice	8
b.	Improve study habits	7
c.	Improve placement	7
d.	Individual help	6
e.	Teach problem solving/higher order thinking	6
f.	Refer students to counselors, specialists	5
g.	Mastery learning	5
h.	Use tutors	5
i.	Improve student motivation	4
j.	Provide quality instruction	3
k.	Use math lab	3
l.	Improve elementary and secondary instruction	3
m.	Use small group instruction	2

(2) Cont'd

n.	Use better instructional materials	2
o.	Use computers, other media	2
p.	Individualize instruction	2
q.	Improve program evaluation	1
r.	Improve math notation	1
s.	Present material from concrete to abstract	1
t.	Self-pacing	1
u.	Have "expert" teachers train other teachers	1
v.	Improved financial aid	1
w.	Make math fun	1
x.	Set up math anxiety clinic	1
y.	Study cognitive styles	1

(3) Successful researchers and
(4) "Experts" in Student Learning Problems

Names and studies were identified in these classifications by many respondents. When this study is replicated in 1980-81, later responses along with the initial ones will be incorporated into 1) a comprehensive directory of researchers and 2) a comprehensive bibliography related to learning problems.

MINIMAL COMPETENCY

The five-year goal of this committee was the establishment of recommended minimal competency levels in mathematics at the two-year colleges. Objectives were listed as:

1. Perform survey to establish present competency levels of mathematics in terms of content area and difficulty level.

2. Investigate other organizations to check out their work in this area.

3. Make colleges and faculties aware of present mathematics requirements at various institutions.

4. Conduct a series of debates on standards, inviting people from many different fields, not just mathematics.

5. Develop a recommended policy of minimal standards and publicize it.

Work on the objectives of this subcommittee was begun in 1977-78. During that year, a survey was conducted to analyze minimal competency in mathematics for two-year college graduates. In the plan for this subcommittee, students needing mathematics skills have been considered in three categories:

Liberal Arts
Vocational and Technical
Science, Engineering, and Mathematics

You will note that the goals and objectives of this subcommittee do not limit the competencies to DMC classes/students. Where some of these competencies are lacking in students, the tyc DMC would be called into play.

The survey and results are on file with ERIC Clearing House of Junior Colleges. The result of major interest in this survey is that more than 85% of the 207 tyc respondents believe that some minimal competency requirement should exist. This completed the first objective.

Work on the second objective has been underway since the fall of 1978. The results have not yet been submitted in a formal report by the chairperson of the subcommittee at that time.

During this past year, a new chairperson has been appointed. Dr. Etta Mae Whitton accepted this appointment late in the year. Professor Whitton chaired a Florida State Task Force on Minimal Competencies in Mathematics for college students in 1979-80. Florida is among the first, if it is not the first, state(s) to establish minimal competencies for college graduates. The report that follows indicates that she has given considerable thought to the continuation of the subcommittee and echoes the need for a revised DMC Committee plan.

ANNUAL REPORT OF THE SUBCOMMITTEE ON MINIMAL COMPETENCY

by

Etta Mae Whitton
Tallahassee Community College
Tallahassee, Florida

Suggested revisions for an updated version of the DMC Committee's and the Minimal Competency Subcommittee's five-year plan(s) are these:

1. That it be clearly understood that the Minimal Mathematics Competency Subcommittee's main concern is with the identification of those minimal competencies in mathematics which college students must acquire by the end of their sophomore year--and NOT confined to those pre-college-level competencies which are sometimes associated with the phrase, "Developmental Mathematics."

2. That there be a reconsideration of the whole matter of different categories of students needing mathematics, such as Liberal Arts, Vocational-Technical, and Science, Engineering, and Mathematics majors. Perhaps our changing society requires some common mathematical literacy of its college graduates, all of them, which extends beyond basic computational and/or survival skills.

3. That the date for making "finalized versions of the envisioned AMATYC-DMC Mathematics Competency Examination available for use by member colleges" be extended to 1982. This just appears to be a more realistic deadline to me.

NEWSLETTER FOR DMC

The five-year goal is to publish, in conjunction with the AMATYC newsletter all DMC committee news. This will be distributed three times a year with the MATYC Journal. The objectives are these:

1. Maintain up-to-date lists of DMC members.
2. Report DMC subcommittee work.
3. Publish DMC chairpersons' reports.
4. State (report on) possible new innovative projects that a school might have developed.
5. Report any upcoming events of the DMC Committee.
6. Allow for short dialogue (paragraph type) between educators to allow an exchange of views.

Last year, it was reported that AMATYC and the MATYC Journal are no longer formally associated. A new AMATYC national publication was approved. Finding the "right" title for the new publication took some time. Now, there have been editions of the AMATYC Review with Alice Berridge, DMC Committee secretary and Newsletter subcommittee chair, serving as editor.

In the future, DMC committee items of interest will be published in the Review. Editor Berridge will continue in the dual role.

As evidenced by the above objectives, the DMC Committee needs a major revision in its goals and objectives as well as the various subcommittees. A major task for the annual meeting of the DMC Committee is to revise the 1977-82 plan to become the 1980-85 plan. This subcommittee's objectives are of an ongoing nature and are evaluated on an annual basis and apply equally well to ensuing years.

ANNUAL REPORT OF THE NEWSLETTER FOR DMC

by

Alice Berridge
Nassau Community College
Garden City, New York

1) During 1979-80, a survey form for the DMC Learning Problems Subcommittee was included with the AMATYC Review mailing in the spring. A followup survey form will be mailed for that subcommittee in the fall.

2) The 1979 Annual Report of the DMC Committee was abstracted and appeared in the Review.

3) The 1979 Annual Report was filed with ERIC.

4) Plans were made and a timeline set for the 1980 Annual Report's preparation, abstracting for the Review and filing with ERIC.

TEACHER QUALIFICATIONS

The five-year goal of this committee is the establishment of recommended qualifications for two-year college teachers of DMC. Objectives were listed as:

1. Establish present qualifications set up by states and/or universities training two-year college faculty.

2. Determine two-year college established qualifications for DMC teachers at AMATYC member institutions.

3. Arrange debates on the necessary qualifications of DMC teachers.

4. Establish AMATYC recommended qualifications for DMC teachers and publicize.

This subcommittee has been working vigorously on the establishment of present qualifications needed by two-year college teachers of DMC. In the spring of 1978, two surveys were conducted. The purpose of one was to identify existing requirements for employment of teachers of DMC in two-year colleges. The purpose of the second was to identify existing teacher training programs for the tyc teacher of DMC in U.S. colleges and universities. Copies of the surveys and results are on file with ERIC Clearing House of Junior Colleges.

With these reports, the subcommittee completed its first two objectives and began activities to accomplish the last two objectives. During the academic year 1978-79, dialogue in tyc's, local professional groups, and state meetings of tyc teachers of the DMC were started. At the 1979 AMATYC meeting, a panel discussion and group hearing was held.

ANNUAL REPORT OF THE SUBCOMMITTEE ON TEACHER QUALIFICATIONS

by

Ronald Adams
Yavapai College
Prescott, Arizona

During this year, the subcommittee has devoted its time to two projects. One was a survey of employment practices of two-year schools for teachers of developmental mathematics curriculum. The response was pretty good and fairly consistent with a similar survey conducted in 1978. The second project was to study carefully the results of the study conducted by Donald Albers in 1979 regarding the graduate training needs of two-year college teachers of mathematics. What remains to be done is the preparation of a recommendation based upon the conclusions of these two projects.

At the 1980 annual meeting of the DMC Committee, the conclusions and the resultant recommendation will be presented for open discussion at the first DMC subcommittee work session. The statement will be revised and refined at a later work session. The resolution will be presented to the entire DMC Committee and finally presented to the AMATYC membership.

The preamble of the position statement follows.

DMC SUBCOMMITTEE FOR TEACHER QUALIFICATIONS

A POSITION STATEMENT
(PRELIMINARY)

During the 1979-80 year mathematics departments throughout the United States were surveyed to "determine two-year college established qualifications for DMC teachers at AMATYC member institutions." This was a follow-up of a similar survey conducted during the 1978 year and was an attempt to ascertain whether any significant change in teacher qualifications has been made.

The method for collecting the appropriate information was left to the discretion of the regional vice-presidents and, as a consequence, the information received was in a variety of forms and in varying degrees of completeness. Upon analysis, however, the results are amazingly similar to those gathered in the previous survey:

- -The vast majority of responding schools require the masters degree in mathematics or mathematics education.
- -Previous experience in working with developmental students is not required.
- -No special training for dealing with developmental students is required.
- -In most schools which responded all members of the mathematics faculty are eligible for assignment to developmental mathematics classes.

Based upon these results the conclusion which must be inferred is that teaching positions in mathematics departments are not classified according to developmental mathematics courses and non-developmental mathematics courses, and no special educational or experimental backgrounds are required of teachers of developmental mathematics courses.

This conclusion is not necessarily surprising to most teachers of mathematics nor alarming to some. However, other information has been collected and must be reviewed. In 1979 Robert McKelvey, Donald Albers, Shlomo Libeskind, and Don Loftsgarden authored a report An Inquiry Into The Graduate Training Needs of Two-Year College Teachers of Mathematics. This document is a wealth of information with certain areas being of particular value. Specifically, the TYC math teachers felt that their educational training left them weak in applied mathematics, poorly trained in motivation techniques, and in need of greater experience through internships for dealing with the developmental student. A majority of practitioners surveyed felt that an ideal doctoral program should contain an internship, courses in problem solving and teaching techniques, and method courses for remedial mathematics.

The disparity between essential qualifications for a position which will require the teaching of developmental mathematics courses and the inferred educational and experimental needs for that job, as identified by the surveyed practitioners, appears substantial.

TESTING

The five-year goal of this committee is to develop an item pool of reliable test questions to be used by AMATYC member institutions for evaluation. Objectives were listed as:

1. Gather placement tests from colleges in USA.

2. Perform content analysis of tests to determine in general the usual areas of concern.

3. Develop alternate responses to test questions that are not in multiple-choice form.

4. Develop item analysis procedures to determine if the alternate choices are suitable.

5. Develop workshops with consultants on placement test construction.

6. Check reliability and validity of a selected sample of placement tests.

All of the objectives of the 1977 DMC Five-Year Plan for the subcommittee on Testing which were feasible had been completed by October of 1979. In 1977 and 1978, booklets of categorized test questions were made available to those attending the annual meetings of AMATYC. The demand for these sets of questions was good. As a consequence, the subcommittee continued its work on test items and provided to the membership at the 1979 annual meeting a card file of test questions from placement/diagnostic tests gathered from two-year colleges throughout the United States. This set of questions was refined beyond the earlier test booklets. Item analysis provided the information to permit the elimination of non-discriminating questions. Corrections were made where needed in typing errors and in answers to the questions.

The card file of test questions will again be available at the AMATYC annual meeting, 1980. Professor Ann Dice, William Rainey Harper College, the former subcommittee chairperson, will have them on sale for $10.00 per set of 600 questions. If requested by mail, a $2.00 postage charge is added.

The one objective not met has been reconsidered. Workshops with consultants on placement test construction have not been economically feasible and will no longer be a subcommittee objective.

For the current status of the committee and plans for the coming year, see the following annual report.

ANNUAL REPORT OF THE TESTING SUBCOMMITTEE

This subcommittee's purpose and objectives were reviewed during the academic year 1979-80, since the objectives as laid out in 1977 were completed. A number of courses of action were considered:

1. Choose a new objective such as the development of a placement test based on the test item pool already prepared and validated.

2. Combine the work of this subcommittee with the Evaluation Subcommittee's work.

3. Discontinue the committee.

4. Choose new objectives which include reviewing available standardized tests designed either for the purpose of placement assessment or for testing in a particular DMC subject area, such as elementary algebra, arithmetic or plane geometry.

Since constructing standardized tests is a task which can be time consuming and costly, the decision of the DMC Committee officers group is to continue the committee but follow alternative number four, above. The former chairperson has resigned to become DMC Committee co-chairperson. A new subcommittee chairperson has been appointed with the understanding that the broad goal and the objectives supporting it are to be revised to fit the alternative course of action chosen.

CONCLUSIONS

The Developmental Mathematics Curriculum Committee as a whole and the several subcommittees are in varying stages with respect to work on and completion of goals and objectives. A recurring theme which runs through this report is that it is time to revisit the long time objectives of the Committee and the goals of the subcommittees.

The Learning Problems Subcommittee is off to a good start and is working on the identification of "Learning Problems" and has begun the work on a bibliography for the subject. The Minimal Competencies Subcommittee is well on its way toward completing its objectives but is changing direction slightly and modifying its target. The Evaluation Model, Hand-Held Calculator, and Teacher Qualification Subcommittees are nearing the end of their work and should have prepared an "official" AMATYC position statement in each area to present to the membership in October 1981. The DMC Newsletter Subcommittee is a continuing support service that serves to inform the membership of AMATYC of DMC Committee activities and provides a forum for discussion. Finally, the Testing Subcommittee completed its first long term goal and is now ready to start a new project.

A five-year plan (1980-85) will be presented to the DMC Committee membership for approval at this October 1980 session. The work of the subcommittees should be able to continue smoothly over the next several years, completing one major project and starting new ones as planned.